

4.1

Triangles and Angles

60

- Goals**
- Classify triangles by their sides and angles.
 - Find angle measures in triangles.

VOCABULARY

Triangle

Vertex

Adjacent sides

Legs

Hypotenuse

Base

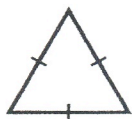
Interior angles

Exterior angles

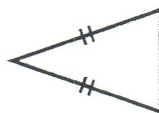
Corollary

NAMES OF TRIANGLES

Classification by Sides



3 congruent sides



At least 2 congruent sides

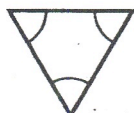


No congruent sides

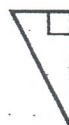
Classification by Angles



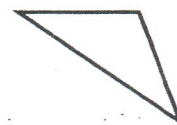
3 acute angles



3 congruent angles



1 right angle



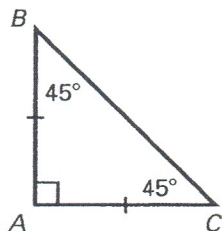
1 obtuse angle

Example 1 Classifying Triangles

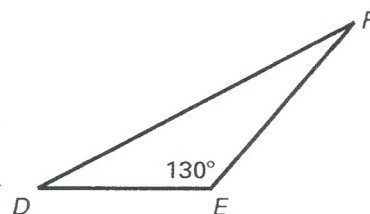
Classify each triangle. Be as specific as possible.

- a. ABC has two acute angles, one right angle and two congruent sides. It is a

_____.



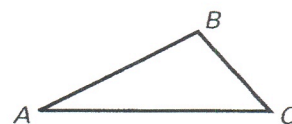
- b. DEF has one obtuse angle and no congruent sides. It is an _____.



THEOREM 4.1: TRIANGLE SUM THEOREM

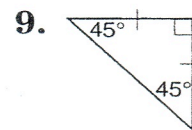
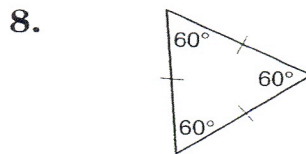
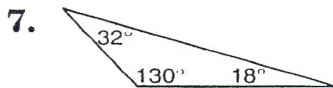
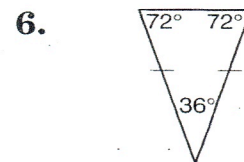
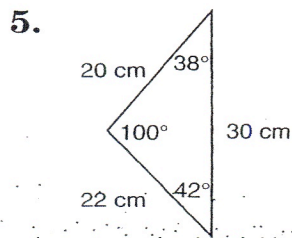
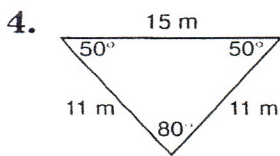
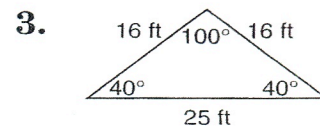
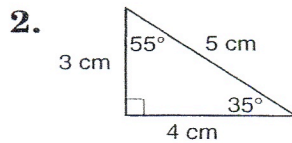
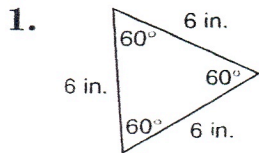
The sum of the measures of the interior angles of a triangle is _____.

$$m \angle A + m \angle B + m \angle C = \underline{\hspace{2cm}}$$



Classifying Triangles

Classify each triangle by its angles and by its sides.



Make a sketch of each triangle. If it is not possible to sketch the figure, write not possible.

10. right scalene

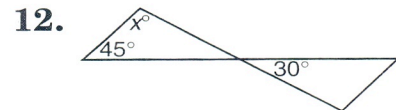
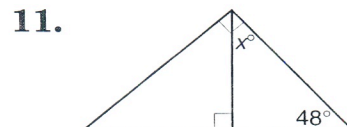
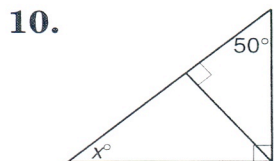
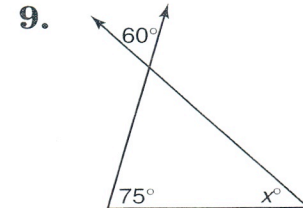
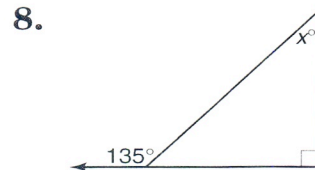
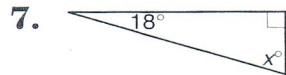
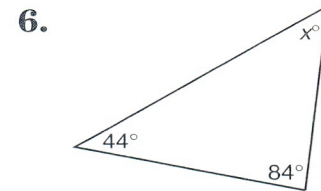
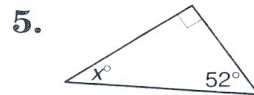
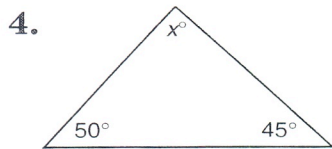
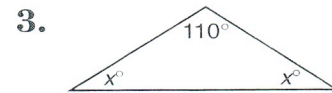
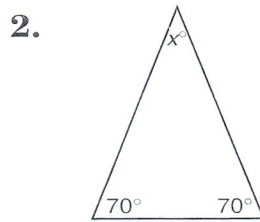
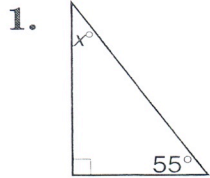
11. obtuse isosceles

12. right isosceles

13. right equilateral

Skills Practice

4.1 Blue

Angles of a Triangle*Find the value of each variable.**Find the measure of each angle in each triangle.*